

The TABLE.

- 202 *Observations on other Spiders, and their Webs, together with an examination of a white Substance flying up and down in the Air after a Fog.*
- 203 *Obfer. 49. Of an Ant.*
That all small Bodies, both Vegetable and Animal, do quickly dry and wither. The best remedy I found to hinder it, and to make the Animal lye still to be observ'd. Several particulars related of the actions of this Creature; and a short description of its parts.
- Obf. 50. Of the wandring Mite.*
- 206 *A description of this Creature, and of another very small one, which usually bore it company. A Conjecture at the original of Mites.*
- Obfer. 51. Of a Crab-like Insect.*
- 208 *A brief description of it.*
- Obfer. 52. Of a Book-worm.*
- 209 *A description of it; where by the way is inserted a digression, experimentally explicating the Phænomena of Pearl. A consideration of its digestive faculty.*
- Obfer. 53. Of a Flea.*
- 211 *A short description of it.*
- Obfer. 54. Of a Louse.*
- 212 *A description of its parts, and some notable circumstances.*
- Obfer. 55. Of Mites.*
The exceeding smallness of some Mites, and their Eggs. A description of the Mites of Cheese: and an intimation of the variety of forms in other Mites, with a Conjecture at the reason.
- 215 *Ob. 56. Of small Vine-Mites.*
A description of them; a guess at their original; their exceeding smallness compar'd with that of a Wood-louse, from which they may be suppos'd to come.
- Obfer. 57. Of Vinegar-worms.*
A description of them, with some considerations on their motions.
- Obf. 58. Of the Inflection of the Rays of Light in the Air.*
A short rehearsal of several Phænomena. An attempt to explicate them: the supposition founded on two Propositions, both which are endeavour'd to be made out by several Experiments. What density and rarity is in respect of refraction: the refraction of Spirit of Wine compared with that of common Water: the refraction of Ice. An Experiment of making an Undulation of the Rays by the mixing of Liquors of differing density. The explication of inflection, mechanically and hypothetically: what Bodies have such an inflection. Several Experiments to shew that the Air has this propriety; that it proceeds from the differing density of the Air: that the upper and under part of the Air are of differing density: some Experiments to prove this. A Table of the strength of the spring of the Air, answering to each degree of extension; when first made, and when repeated. Another Experiment of compressing the Air. A Table of the strength of the Air, answering to each compression and expansion; from which the height of

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- 227 *of the Air may be suppos'd indefinite; to what degree the Air is rarifi'd at any distance above the Surface of the Earth: how, from this, Inflection is inferr'd; and several Phænomena explain'd. That the Air near the Earth is compos'd of parts of differing density; made probable by several Experiments and Observations; how this propriety produces the effects of the waving and dancing of Bodies; and of the twinkling of the Stars. Several Phænomena explicated. Some Queries added.*
- 231 *1. Whether this Principle may not be made use of, for perfecting Optick Glasses? What might be hoped from it if it were to be done?*
- 232 *2. Whether from this Principle the apparition of some new Stars may not be explicated?*
- 233 *3. Whether the height of the Air may be defin'd by it?*
- 234 *4. Whether there may not sometimes be so great a disparity of density between the upper and under parts of the Air, as to make a reflecting Surface?*
- 235 *5. Whether, if so, this will not explicate the Phænomena of the Clouds. An Experiment to this purpose?*
- 236 *7. Whether the Rayes from the top of Mountains are not bended into Curve-lines by inflection? An Argument for it, taken from an Experiment made on St. Paul's Steeple.*
- 237 *8. Whether the distance of the Planets will not be more difficult to be found? What wayes are most likely to rectifie the distance of the Moon: the way of fitting Telescopes for such Observations. How to make the Observations, and how from them to find the true distance of the Moon at any time. How the distance of the Sun may be found by two Observators. The way by the Dicotomy of the Moon uncertain. That the distance of the Moon may be less then it has been hitherto suppos'd. Kepler's Supposition not so probable: the explication of the Phænomena by another Hypothesis.*
- Obfer. 59. Of the fixt Stars.*
- 241 *Of the multitudes of Stars discoverable by the Telescope, and the variety of their magnitudes: 78. Stars distinguish'd in the Pleiades: that there are degrees of bigness even in the Stars accounted of the same magnitude: the longer the Glasses are, and the bigger apertures they will indure, the more fit they are for these discoveries: that 'tis probable, longer Glasses would yet make greater discoveries. 5. Stars discover'd in the Galaxie of Orion's Sword.*
- Obfer. 60. Of the Moon.*
A description of a Vale in the Moon; what call'd by Hevelius and Ricciolus, and how describ'd by them: with what substances the hills of the Moon may be cover'd. A description of the pits of the Moon, and a conjecture at their cause: two Experiments that make it probable, that of the surface of boyl'd Alabafter dust seeming the most likely to be resembled by eruptions of vapours out of the body of the Moon: that Earthquakes seem to be generated much the same way, and their effects seem very similar. An Argument that there may be such variations in the Moon, because greater have been observ'd in the Sun: because the substance of the Moon and Earth seem much alike: and because 'tis probable the Moon has a gravitating principle: this is argued from several particulars. The reason why several pits are one within another. The use that may be made of this Instance of a gravity in the Moon.

ERRATA.